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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,732	10/30/2001	David R. Lumgair	2001B094	9763

23455 7590 07/01/2003

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EXAMINER
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GRIFFIN, WALTER DEAN

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 07/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/020,732

Applicant(s)

LUMGAIR ET AL.

Examiner

Walter D. Griffin

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 October 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The Table of Contents for this application indicates that an Information Disclosure Statement was filed on February 27, 2003. However, the examiner cannot find this IDS. Therefore, the examiner requests that applicant provide a duplicate of this paper so that the listed references can be considered.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 17-22, 29, 31-34, and 36-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Mulvaney, III et al. (US 5,744,680).

The Mulvaney reference discloses a process for producing olefins such as ethylene and propylene from an oxygenate feed. The process comprises contacting the feed, which contains methanol, at conversion conditions with a catalyst containing SAPO-17 or SAPO-34. Process conditions include temperatures ranging from 200° to 700°C and pressures between 0.001 and 1000 atmospheres. The effluent from the process, which comprises olefins, water, and catalyst particles, is passed through heat exchangers, thereby cooling the effluent and heating and vaporizing the feed. The cooled effluent is then contacted with a water wash stream to remove catalyst fines. The effluent is then condensed. There is no indication that the effluent is

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condensed prior to the condensing step thereby indicating that the temperature of the effluent is maintained above its dew point prior to washing. Since the effluent is comprised of similar components as compared to the claimed effluent, the relationship between the aqueous and non-aqueous dew points for the disclosed effluent would be the same as in claim 21. See col. 3, lines 14-29; col. 4, lines 45-67; col. 5, lines 1-33; col. 7, lines 17-34; col. 8, lines 29-63; and the figure.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2-16 and 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulvaney, III et al. (US 5,744,680).

The Mulvaney reference discloses a process for producing olefins such as ethylene and propylene from an oxygenate feed. The process comprises contacting the feed, which contains methanol, at conversion conditions with a catalyst containing SAPO-17 or SAPO-34. Process conditions include temperatures ranging from 200° to 700°C and pressures between 0.001 and 1000 atmospheres. The effluent from the process, which comprises olefins, water, and catalyst particles, is passed through heat exchangers, thereby cooling the effluent and heating and vaporizing the feed. The cooled effluent is then contacted with a water wash stream to remove catalyst fines. The effluent is then condensed. There is no indication that the effluent is condensed prior to the condensing step thereby indicating that the temperature of the effluent is maintained above its dew point prior to washing. Since the effluent is comprised of similar components as compared to the claimed effluent, the relationship between the aqueous and non-aqueous dew points for the disclosed effluent would be the same as in claim 21. See col. 3, lines 14-29; col. 4, lines 45-67; col. 5, lines 1-33; col. 7, lines 17-34; col. 8, lines 29-63; and the figure.

The Mulvaney reference does not disclose the claimed compositions of the effluent stream and does not disclose the maintaining of the temperature in the claimed amounts above the dew point as in claims 23-25.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Mulvaney by producing effluent streams as claimed because Mulvaney discloses that process conditions including residence times,

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temperature, type of catalyst, WHSV, flow rate, etc. affect the composition of the effluent.

Therefore, one would adjust these conditions to obtain a desired product including those claimed.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Mulvaney by maintaining the temperature in the claimed amounts above the dew point as in claims 23-25 because, as long as the temperature is above the dew point by any amount including those claimed, a successful process will result.

Claims 30 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulvaney, III et al. (US 5,744,680) in view of Miller et al. (US 6,403,854).

As discussed above, the Mulvaney reference does not disclose the use of a quench tower to wash the effluent.

The Miller reference discloses that quenching a reactor effluent from an oxygenate conversion zone in a quench tower removes catalyst fines from the effluent. See col. 10, lines 14-57.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Mulvaney by utilizing a quench tower to wash the effluent as suggested by Miller because a quench tower produces a bottoms stream that contains catalyst fines thereby indicating that the use of a quench tower would effectively remove fines from the effluent.

Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mulvaney, III et al. (US 5,744,680) in view of Pennington et al. (US 4,338,475).

As discussed above, the Mulvaney reference does not disclose the use of a cyclone separator.

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The Pennington reference discloses the use of a cyclone separator in an oxygenate to olefins conversion process. See col. 11, lines 21-43.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Mulvaney by utilizing a cyclone separator as suggested by Pennington because the use of these cyclones will result in the separation of a large proportion of the entrained catalyst fines.

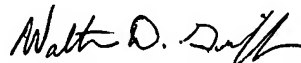
### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art not relied upon discloses oxygenate to olefin conversion processes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is 703-305-3774. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.



Walter D. Griffin  
Primary Examiner  
Art Unit 1764

WG  
June 26, 2003